To master Linux, follow this structured roadmap that progresses from foundational concepts to advanced administration and automation. The plan integrates key skills, practical exercises, and recommended resources from trusted sources:

**1. Foundational Skills**

**Start with Linux basics:**

* **Understand Linux architecture**: Kernel, distributions (Ubuntu, Mint), boot process, and file hierarchy[1](https://www.coursera.org/in/articles/how-to-learn-linux)[2](https://www.udemy.com/course/linux-for-beginners-2021/).
* **Command-line essentials**:

bash

cd, ls, pwd, mkdir, touch, cat, echo, man, grep, chmod

Learn file navigation (cd, ls), redirection (>, >>), and text manipulation (grep, sed)[1](https://www.coursera.org/in/articles/how-to-learn-linux)[3](https://www.tutorialspoint.com/unix/index.htm).

* **Compare Linux** with Windows/macOS (open-source nature, permissions model)[1](https://www.coursera.org/in/articles/how-to-learn-linux).

**Resources**:

* Coursera’s *Linux Basics for Beginners*[1](https://www.coursera.org/in/articles/how-to-learn-linux)
* Udemy’s *Linux for Beginners* (hands-on Kali Linux labs)[2](https://www.udemy.com/course/linux-for-beginners-2021/)
* TutorialsPoint’s UNIX/Linux tutorial[3](https://www.tutorialspoint.com/unix/index.htm)

**2. Intermediate Proficiency**

**Expand your toolkit**:

* **Shell scripting**: Automate tasks with Bash (variables, loops, conditionals). Example:

bash

*# Backup script*

tar -czf backup\_$(date +%F).tar.gz /path/to/directory

* **System management**:
  + Package installation (apt-get, yum)[3](https://www.tutorialspoint.com/unix/index.htm).
  + Process control (ps, kill, top).
  + User/group management (adduser, passwd)[5](https://developers.redhat.com/cheat-sheets/advanced-linux-commands).
* **Networking**: Configure IP addresses, SSH, and firewalls (iptables).

**Key topics**:

* Wildcards (\*, ?), job control (bg, fg), and input/output redirection[4](https://cloudacademy.com/course/intermediate-linux-skills-1348/).
* File permissions (chmod, chown) and disk partitioning (fdisk)[5](https://developers.redhat.com/cheat-sheets/advanced-linux-commands).

**Resources**:

* Cloud Academy’s *Intermediate Linux Skills* (wildcards, scripting)[4](https://cloudacademy.com/course/intermediate-linux-skills-1348/)
* Red Hat’s *Advanced Commands Cheat Sheet*[5](https://developers.redhat.com/cheat-sheets/advanced-linux-commands)

**3. Advanced Mastery**

**Specialize in administration and security**:

* **Kernel tuning**: Optimize performance using sysctl and analyze logs (journalctl)[7](https://www.keencomputer.com/solutions/cloud-computing/340-advanced-linux-expert-series-a-deep-dive-into-linux-mastery).
* **Security hardening**:
  + Configure SELinux/AppArmor.
  + Implement encryption (LUKS, GPG) and audit systems (auditd)[7](https://www.keencomputer.com/solutions/cloud-computing/340-advanced-linux-expert-series-a-deep-dive-into-linux-mastery).
* **Automation**:
  + Use Ansible/Puppet for configuration management.
  + Schedule tasks with cron and systemd timers[6](https://www.udemy.com/course/linux-mastery/).

**Advanced tools**:

* **Containerization**: Docker/Podman for app isolation[7](https://www.keencomputer.com/solutions/cloud-computing/340-advanced-linux-expert-series-a-deep-dive-into-linux-mastery).
* **Cloud integration**: Deploy Linux on AWS/Azure using Terraform.

**Resources**:

* *Linux Mastery* Udemy course (Bash scripting, cron)[6](https://www.udemy.com/course/linux-mastery/)
* Keen Computer’s *Advanced Linux Expert Series* (kernel internals, CI/CD)[7](https://www.keencomputer.com/solutions/cloud-computing/340-advanced-linux-expert-series-a-deep-dive-into-linux-mastery)

**4. Continuous Learning**

* **Practice environments**: Use Webminal (free online terminal) or VirtualBox for labs[8](https://dev.to/secure_bug/best-websites-to-learn-linux-for-free-11lo).
* **Communities**: Engage on DEV Community, Reddit’s r/linuxadmin, and Stack Overflow.
* **Certifications**: Pursue LPIC-1/2 or Red Hat Certified Engineer (RHCE).

**Final Tips**:

* Prioritize hands-on projects (e.g., setting up a web server or automating backups).
* Explore specialized areas like DevOps, cybersecurity, or cloud engineering based on career goals.

By following this roadmap, you’ll progress from basic command-line fluency to expert-level system administration, supported by practical exercises and industry-standard tools.